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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,527	12/14/2001	David Berkstresser	9323.014.00	3252

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EXAMINER

OJINI, EZIAMARA ANTHONY

ART UNIT PAPER NUMBER

3723

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,527

Applicant(s)

BERKSTRESSER ET AL.

Examiner

Anthony Ojini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to because the character "28" in figure 5 was not disclosed in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "self alignment structures used to self align the rigid plate assembly receivable on the rotatable platen" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable

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one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 10, line 3, 4, the expression "self alignment structures used to self align the rigid plate assembly receivable on the rotatable platen" was not described in the specification.

In claim 22, lines 3,4, the expression " automatically aligning the rigid plate assembly with respect to the rotatable platen upon suctioning the rigid plate assembly onto the rotatable platen" was not described in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 13, line 3, the expression "said rigid plate member" lacks antecedent basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1,3-8,11-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crevasse et al. (6,033,293) in view of Ward (6,398,905).

With respect to claims 1,3,4, Crevasse et al. disclose an apparatus in a CMP machine, comprising a rigid plate (34) having a top surface and a bottom surface, a polishing pad (32) provided on the top surface of the rigid plate (see fig. 2).

Crevasse et al. also disclose the rigid plate is suctioned onto a top surface of a rotatable platen having a plurality of vacuum channels formed within the platen (see fig. 2). Crevasse et al. show a prior art figure wherein a polishing pad (10) is adhesively bonded to a rigid plate (12) but fail to show the polishing pad (32) is adhesively bonded to the rigid plate (34).

Ward discloses the polishing pad (14) is adhesively bonded to the rigid plate (20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a polishing pad that is adhesively bonded to a rigid plate in view of Ward so as to adhere the polishing pad onto the plate during polishing of the substrate.

With respect to claim 5, Crevasse et al. disclose wherein at least one vacuum channel includes at least one cavity in a top surface of the rotatable platen to allow the rigid platen to be suctioned with a vacuum (see fig. 2).

With respect to claim 6, Crevasse et al. disclose wherein at least one vacuum channel (49) is coupled to a source of a releasable vacuum force (53,58) that act on the bottom surface of the platen to bias the rigid plate assembly (30) towards the rotatable platen (40).

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With respect to claim 7, Crevasse et al. disclose wherein the source of releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen (see claim 8 of Crevasse et al.).

With respect to claims 8,18, Crevasse et al. disclose wherein the source comprises a vacuum and a vacuum line, and wherein the vacuum line opens to the at least one vacuum channel and couples the at least one vacuum channel to the vacuum source (see claim 6 of Crevasse et al.).

With respect to claim 11, Crevasse et al. disclose wherein at the least one vacuum channel comprises a single cavity, circular in dimension having a single diameter greater than at least half of the diameter of the rotatable platen (see fig. 2).

With respect to claim 12, Crevasse et al. disclose wherein at the least one vacuum channel comprises a plurality of cavities, arranged to linearly radiate from the center of the top surface of the rotatable platen (see figs. 2, 2B).

With respect to claims 13,14,15, Crevasse et al. disclose a method to use a vacuum to hold a rigid plate assembly (32,34) to a rotatable platen (40) in a polishing apparatus, comprising the following steps: arranging a polishing pad (32) on a top surface of a rigid plate (34), to form a rigid plate assembly; and suctioning the rigid plate assembly (32,34) onto a top surface of the rotatable platen (40). Crevasse et al. also disclose a step of forming at least one vacuum

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channel within the rotatable platen wherein said at least one vacuum channel is formed by at least one cavity in a top surface of the rotatable platen (see fig. 2).

Crevasse et al. fail to show the step wherein polishing pad (32) is adhesively bonded to the rigid plate (34).

Ward discloses the polishing pad (14) is adhesively bonded to the rigid plate (20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a polishing pad that is adhesively bonded to a rigid plate in view of Ward so as to adhered the polishing pad onto the plate during polishing of the substrate.

With respect to claim 16, Crevasse et al. disclose step of coupling at least one vacuum channel to a source of releasable vacuum force so as to act on bottom surface to pull the rigid plate assembly (30) towards the rotatable platen (see fig. 2).

With respect to claim 17, Crevasse et al. disclose wherein the source of releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen (see claim 8 of Crevasse et al.).

With respect to claim 20, Crevasse et al. disclose wherein a suctioning step is performed by asserting a vacuum between the rigid plate member (32,34) and the rotatable platen (see fig. 2).

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With respect to claim 21, Crevasse et al. disclose vacuum is selectively applied (see col. 4, lines 56-58).

Claims 2,9,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crevasse et al. (6,033,293) in view of Ward (6,398,905) as applied to claims 1,3,13 above, and further in view of Park et al (6,629,876 B1).

With respect to claims 2,9 and 19, Crevasse et al. fail to disclose the rigid plate member includes alignment pins protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings formed on the rotatable platen.

Park et al. disclose rigid plate (131) that includes alignment pins (137) protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings (177) formed on a chuck platen.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a rigid plate that includes alignment pins protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings formed on a chuck platen in view of Park et al. so as to ensure the rigid polishing plate is firmly retain on top of the rotatable platen during polishing.

Allowable Subject Matter

Claims 10 and 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nishimura, Wark et al., Kato et al. disclose apparatus having vacuum suction device communicating with rotating platen respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7.30 to 5.00 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone number for the organization where this application or proceeding is assigned is 703 308 3590.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1148.



AO
November 12, 2003